

What a week! Severe storm damage, low snow, record rainfall, and great news for the Sierra snowpack!

Severe cells popped up during this last week's storm systems, because they were so cold; a funnel cloud in Madera on Feb. 22 (thanks to Steve Johnson, Atmospherics), a now-designated downburst in Corning on Feb 22, and a confirmed F0 tornado in the Elk Grove area off highway 99 on Feb. 26. Sacramento National Weather Service personnel were dispatched twice for damage assessment with this round of storms. The Elk Grove damage had a confined path that trailed for about 1 mile; with a couple of power poles tipped, branch, fence, roof tiles and solar panels damaged, and one visual sighting of swirling debris during the even.

Snow levels were as low as 500' on Tuesday morning, with snow in Redding. Low snow occurred at 1,500' at Lake of the Pines on Tuesday evening, the 27th, accumulating to 3". Auburn had a much-televised snow at 1,200'. These snow levels were well forecast by computer models, and announced in this newsletter, and by other sources several days in advance. As of Wednesday morning, Feb. 28, Pacific House (el. 3,400' El Dorado Co.) had 22" of snow on the ground, with 8.5" fresh overnight, and Groveland (el. 2,800' Tuolumne Co.) had 8" of snow on the ground this morning. Sacramento Executive Airport received 0.77" of rain on Monday, February 26th, a record for the date. Two reports of hail were made in San Francisco on Feb. 26.

Of course, the best news is the snowpack improvement. Gains were made in all three regions; the Northern, Central, and Southern Sierra. DWR officials remained optimistic, even in late January that there was still plenty of time to improve the numbers, if not catch up fully.

Wednesday's planned snow survey has been postponed to Friday, March 2nd, due to the mudslide on highway 50. Snowpack water content had averaged 40% statewide on February 1st, but snow sensor measurements as of this writing put it at a healthier 64% on average, with the Northern registering 71%, the Central 66%, and the Southern 55%. This is what a few good, cold storms can do. Survey results will be available next week.

On February 1st, the 8-station Northern Sierra precipitation measured just 59% of normal for the season to date. As of today, February 28, that number is 83%. The 8 stations that generate this index are Mount Shasta City, Shasta Dam, Mineral, Brush Creek, Quincy, Sierraville, Pacific House, and Blue Canyon. They provide a good estimate of the overall conditions in the State's main water supply basins as the season plays out. Just as an aside, the Feather River Basin is tracked by a set of guidance measurements as well, and those sites help prepare DWR forecasts for the Feather River at Oroville, as well as general conditions for that part of the state. These sites; DeSabra, Bucks Lake, Brush Creek, La Porte, Quincy, Oroville Dam and Sierraville are tracked for both actual precipitation, as well as forecasted precipitation, and you may see Feather

predictions in this newsletter, or in other discussions. Thank you to the forecasters with the National Weather Service HAS unit.

Some 7-day precipitation totals include: 4.08" at Diddy Wells, 6.32" at Venado, 5.09" at Huntington Lake, and 2.53" at Opid's Camp.

Improvements in seasonal rainfall statewide:

Location	Season (July – June) precipitation percentage
Bakersfield	50%
Eureka	103%
Fresno	58%
Redding	78%
Sacramento	64%
San Francisco	85%
Los Angeles	23%
San Diego	44%

Short Term forecast: The Feather River Basin is expected to get another 0.10" of rain in the next five days. Other than the North coast, we're moving into a relatively dry 'ridge' pattern. The next system at this point looks like it would arrive Monday or Monday night, March 5th. Not much action till then.

Long Term forecast: El Nino conditions are weakening. We have been in a 'moderate' El Nino pattern, with slightly elevated ocean temperatures off the coast of South America, and across the central Pacific. The impact does not appear to have been too great over California this winter, and in fact, the sea surface temperatures are now moving more toward a neutral pattern. 30-day Climate Prediction Center estimates for March indicate virtually normal precipitation statewide, with the exception of a small chance of drier than normal conditions over the southeastern fifth of the state. March temperature outlooks show warmer than average temperatures nearly statewide, with the exception of a strip along the southern coast, which will be normal to below normal.

<http://www.cpc.ncep.noaa.gov/products/predictions/30day/>

A weather research project, sponsored by NOAA, is taking place this winter over California. The Hydrometeorological Testbed (HMT) program is in the middle of a multi-year deployment designed to improve weather and water forecasts. HMT has conducted ground, sounding, and remote profiling measurements of significant, advancing west coast storms 7 times so far this winter; concluding the most recent data gathering period on Wednesday, Feb. 28. The goal of the project is to provide advanced

warning of storms that may lead to flooding problems along the west coast. If you are interested in this research, feel free to access their website:

<http://hmt.noaa.gov/>

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